



Accessibility and Usability Standards for Procurement

DQ Status	Approved	Standard	
DQ Content Authority	Tiffany Hall (Chief Information Officer)		
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Description	<p>Intended Audience: All BBC Staff</p> <p>Use: Providing the information and support staff need to make educated choices to ensure accessibility and usability are considerations in the process of procurement for internally-facing applications and systems. This should be used in conjunction with the associated check-list for discussions with technology suppliers.</p>		
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British Broadcasting Corporation

Accessibility and Usability Standards Document One -
Procurement and Accessibility and Usability.

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1. Introduction

This document is first in a series of eight which cover Accessibility and Usability Standards. Other documents which cover Accessibility and Usability Standards that should be consulted are:

- Document Two – Procurement Checklists
- Document Three - Integration Summary
- Document Four - Integration Checklist
- Document Five - Training Inclusively for Disabled People
- Document Six - Training Inclusively for Disabled People Checklist
- Document Seven – Technical Design Standards
- Document Eight – Accessibility and Usability Standards for producing accessible emails

In June 2004, the BBC Governors announced their intention to increase the proportion of disabled staff at the BBC from 2.8% to 4% by 2007. This target was exceeded: as of May 2009 the figure is 4.4%. There is now a new target in place – 5.5% before the end 2012.

This has inevitably increased the percentage of access technology users need to access our desktop applications and broadcast technology. Future Media and Technology intend the BBC to be a world class leader for accessibility of technology, implementing corporate ownership of access, rather than the outdated model of associating patch up fixes with the disabled individual. In this way, the BBC will be technologically accessible wherever a disabled person happens to log in and will enable them to move from work-station to work-station or studio to studio.

The Governors' targets are prompted by changes in the law since 1995 (further updated in 2010) and research which clearly demonstrates a strong business case for employing more disabled members of staff. Providing a fully accessible technological environment will help the BBC to employ the most talented individuals. The aim therefore is to provide an accessible environment that disabled members of staff can work in or move into, not to address 'problems' at an individual level.

The 1995 Disability Discrimination Act (DDA) was replaced in 2010 with the Equalities Act (EA) and places a duty on the BBC, as it does other UK organisations, 'to make reasonable adjustments' so as not to place a disabled person at a substantial disadvantage compared with people who are not disabled and to ensure that disabled people are not treated less favourably than non-disabled colleagues. What constitutes a 'reasonable adjustment' is an important consideration as well as the process that facilitates the decision. This is because a failure to make reasonable adjustments could have considerable financial consequences for the BBC's reputation and brand, as well as having cost implications if a case is brought before a tribunal.

The BBC also recognises the importance of ensuring its technologies and applications are usable to all members of staff. By following a user centred design approach, based on ISO 9241 Part 210, the BBC can ensure that systems allow staff to work more efficiently, effectively and comfortably. In fact, making a product technically accessible is not enough as accessibility does not always imply usability. For instance, coding a form field so that its label is associated with the data entry field will make the field accessible to JAWS or VoiceOver users. However, if the content of the label is not meaningful, then the data entry field becomes meaningless to all users. To ensure all staff can work optimally, accessible products must also be usable, appealing and pleasurable to use.

Investment in accessible and usable products provides a number of significant benefits:

- Increased effectiveness and efficiency of your workforce
- Decreased training time and learning time
- Reduced maintenance costs
- Better user satisfaction, leading to a happier more confident workforce

2. Procurement, Accessibility and Usability

This document provides information and support for project managers and sponsors to enable them to make educated choices in ensuring that accessibility and usability are considered during the process of procurement. This document should be used in conjunction with a checklist for discussions with technology suppliers.

1. Prior to the selection of an application or item of broadcast technology, it is essential that you consider the requirements of the end user so that you can understand the sort of solution that is best for the situation. Some questions you should investigate include:
 - What goals do the end users need to achieve? What will the product be used for?
 - What sort of environment will the product be used in?
 - What sort of knowledge/skills have the end users got? Can any bridges in knowledge be improved through training?
 - Is a new product necessary or can an existing product be upgraded?
2. If you and your team decide to invest in a new product, then you need to carefully consider which product to choose. The selection of one application or an item of broadcast technology over another will be driven by many factors: functionality, compatibility, usability and cost to name just a few. In the midst of these criteria, it is important to remember that a percentage of your user-base will have an impairment which will necessitate the use of access technology. The core enabling technologies at the BBC for Microsoft Windows based applications are:
 - Jaws, a Screen reader which provides speech and Braille output for a blind user
 - Zoomtext, a screen magnification package for staff with low vision
 - Dragon Naturally Speaking, which is voice-activated software for people who aren't able to use a mouse or keyboard.
 - TextHelp is a literacy support tool designed to assist users who require extra assistance when reading or composing text

There is an equivalent set of products for Apple OSX based applications:

- VoiceOver screen reading
- Zoom magnification
- Dragon Dictate for Mac (formerly MacSpeech) voice recognition
- TextHelp for Mac

For systems not based on Windows or Apple the system must be shown to be usable with an equivalent set of Assistive Technology products.

It is possible that any application or broadcast hardware will not be set up to work with these technologies. However, it is a good idea to start by asking suppliers what consideration for accessibility and usability went into the development of their product and further, what contingencies they have put in place to fill any perceived gaps in accessibility and usability provision.

3. The BBC is an international organisation comprising of multilingual Directorates such as BBC Cymru, BBC Alba and BBC Northern Ireland. BBC World Service provides programmes and content in English and 33 other languages, based in London and supporting employees with a range of language requirements all over the world. In order to ensure that all internal systems can be used all over the Corporation it is essential that all internal products are developed so that they can support all languages specified by the BBC. It is also a legal requirement that any product used in Wales can support Welsh. Please contact the BBC's News Production & Language Specialist [Theresa Goldband [theresa.goldband@bbc.co.uk] at the time of writing) for more details.
4. Evaluate the product to help you choose the most accessible and usable. This may be achieved by conducting an expert review of the product or, preferably, by user testing. The BBC's News Production & Language Specialist will be able to provide feedback on the language support and 3rd party software support provided by product.

Ask the supplier for a trial version of the application or broadcast hardware and, if obtained, consider running user testing of the software with a sample of end users (including users of access technology). When selecting your sample of users, consider if your users vary in requirements across groups, as well as the frequency of use by each group. For example, if you have a range of novice to expert users, you will want to recruit at least 3 novice and 3 expert users; if the functionality and user interface differs significantly by role, you will also want to recruit a sample 3 users per role. Ideally, within your chosen user sample, you should aim to recruit users with multiple language requirements so that it is possible to user test the language capabilities of the system as well.

5. Once you have recruited your sample, prepare a test plan and list of 3 or 4 task scenarios. An example of a task scenario is: "Imagine you have just arrived at your desk in the morning and you notice a new application on your desktop. Please open this application and set it up to match your preferences". The task scenarios do not tell users how to complete the task, but rather present a typical goal that they may want to achieve as part of their role.

During the task, ask the user to think aloud, and record: any problems they may experience, unclear use of language, inconsistencies and barriers. (For more details on usability and accessibility best practice please refer to the checklists in Accessibility and Usability Standards Document Four and technical standards and guidelines in Accessibility and Usability Standards Document Seven.)

Analyse the data and identify trends in issues to prioritise the showstoppers from the 'nice to haves'. Report the findings from the end users about the efficiency, effectiveness and satisfaction of the product prior to procurement and use this information to negotiate improvements to the product.

If you are unable to obtain a trial version of the product, try to obtain a demonstration or even screen shots. A usability expert can then carry out a 'walkthrough' with the user and check against usability best practice and heuristics. For more information on Expert Reviews and User Testing, please contact The BBC's Head of Accessibility who will refer you to the BBC's appointed usability expert(s).

6. Although the BBC is liable under the Equalities Act, suppliers are not. You will need to use your buying power and the BBC's reputation to encourage suppliers to provide an accessible system. Retro-fitting accessibility and usability is much more costly and time consuming so if the architecture of the system can be built with accessibility and usability

in mind as early as possible, the whole process of integration and implementation will be simplified.

A named member of the project team must be charged with ownership of negotiations and on-going accessibility and usability improvements. This improvement work must be written into the project plan and, importantly, any contract with external suppliers. Targets must be set and carefully monitored.

It is very likely that any conversations you have regarding alterations in architecture will trigger cost negotiations between you and your supplier. If you have already decided to go with their system you may be at the mercy of your contract with them. If you still have other alternatives, it might be possible to engage them by using their willingness to modify for access as an advantage over their competitors. If this isn't possible however, the additional costs incurred will have to be financed by the project budget as there is no central funding for accessibility or usability. Therefore it is vital that accessibility and usability requirements are considered from the start, i.e. at the initial investment proposal stage.

An on-going relationship regarding accessibility and usability needs to be established with the supplier so that upgrades can be used to make improvements to the system and to ensure that existing functionality is continued. Once the system has been agreed, the next stage of assessment and accessibility and usability tailoring will need to commence.

3. Accessibility and Usability in Formal Documents

It is crucial that the BBC's requirements for accessibility and usability as well as the importance we place on those requirements are clearly specified to suppliers. Consequently any formal documents sent out to suppliers, e.g. RFQ's or ITT's must include details of the requirements the BBC has for accessibility and usability.

Although documents sent to suppliers are similar in nature they do vary from project to project. Below are a series of suggested inserts on accessibility and usability that can be put into requirements or tender documents sent to suppliers. The exact content of the text actually inserted may vary, but it is crucial that sections such as those detailed below are present in these documents.

3.1 Overview

There will likely be an Overview section towards the beginning of the document. That section should include a subsection that is a general statement on the BBC's stance on and requirements for accessibility.

Accessibility

It is the BBC's policy that all systems and equipment should be accessible to all users in compliance with the Equalities Act 2010 ("EA"). The system must be compliant with accessibility enhancing software and hardware, such as custom control surfaces, In the case of Windows-based systems the system must be usable with Zoomtext magnification, Dragon voice recognition and JAWS screen reading. For Apple-based systems the system must be compatible with VoiceOver screen reading, Zoom magnification, Dragon Dictate for Mac voice recognition and Text Help for Mac. For systems not based on Windows or Apple the system must be shown to be usable with an equivalent set of Assistive Technology products.

For details, please refer to the General Technical Specification document on the BBC's DQ website (<http://www.bbc.co.uk/guidelines/dq/contents/diversity.shtml>)

The Tenderer shall describe the range of accessibility enhancing tools already integrated and describe the process and potential timescales of adding custom solutions as and when required to ensure the accessibility of the system to all users in compliance with the EA.

The Overview should include the following as Key Requirements:

If it is a software system that is to be procured:

- The application must be fully accessible to all users in compliance with the EA.
- The supplier must be able to prove that they have conducted formal usability evaluations with the target user group.

If it is a piece of broadcast hardware that is to be procured:

- The hardware must have controls and indications which are, or can be made, fully accessible to all users through open APIs, accessibility-enhancing software and so on.

3.2 Main Section on Accessibility and Usability

Somewhere in the document there must be a section that details the BBC's accessibility and usability requirements of a product. This section includes a statement of what the BBC expects from the system so as to assure accessibility and usability.

3.2.1 Accessibility

All software and hardware must be designed such that it is fully accessible to all users. Hardware components must be designed such that equivalent functionality can be achieved using alternative means, thus enabling operation by users who require custom adaptations. This may be accomplished, for example, by using open protocols to control the equipment remotely over a computer network connection.

Graphical displays and readouts (including "self-labelling buttons") must be designed in such a way that the information could be presented in alternate formats, for example by interfacing to an external voice synthesiser such that the legend can be spoken to the user. Although normal operation may involve touch-screen and soft-key functions, it must be possible for any user to operate the equipment fluently using alternative controls if desired, and it should be possible to interface with assistive technologies (e.g. screen magnifiers, Braille readers etc) when necessary.

There are detailed guidelines in the documents on the [BBC's DQ website](http://www.bbc.co.uk/guidelines/dq/contents/diversity.shtml) at the following location:

<http://www.bbc.co.uk/guidelines/dq/contents/diversity.shtml>

However, in outline, so far as is reasonably practical and without unduly compromising the general usability, all systems and places of work shall be designed such that:

- All rooms are accessible by people with differing physical abilities.
- All equipment and furniture is usable by people with differing physical abilities.
- All language is clear and easy to understand.
- Tasks, controls, buttons and links are clearly labelled and easy to understand.
- Documentation, training and support materials are accessible.

- Contextual information and functionality is provided in a clear and accessible manner.
- Contextual information is fully exploited to populate data entry fields.
- All icons are easy to understand and supplemented with clear text equivalents (please note that icons are not necessarily required but, if used, must have a text equivalent).
- Users have access to the full range of operating system accessibility tools without affecting application functionality.
- They are compatible with assistive technologies
- All user-selected system settings (e.g. font size) for input and output are adhered to.
- Standard keyboard access methods are adhered to.
- They do not require use of a pointing device without provision of alternatives.
- All information can be perceived by users with restricted or no vision (potentially through the use of Assistive Software).
- All information can be perceived by users with restricted or no hearing.
- All multimedia content (e.g. audio and video) must incorporate Subtitles (or some other text equivalent) or Audio Description.
- All sub-systems for incorporating multimedia content must provide a mechanism for integrating Subtitles and Audio Description.
- Do not cause the screen to flash at a frequency which the user finds perceptible, generally between 2Hz and 49Hz.
- Use the simplest language possible for instructions, prompts and outputs and, where possible, supplement it with pictorial information or spoken language.
- Ensure a logical tab order for controls, input fields and other objects.
- Provide descriptions and instructions for all accessibility features.

Note that due to the wide range of potential user requirements and the associated cost of meeting them all, if specific adaptations cannot be implemented upon delivery, an undertaking is required to implement such reasonable adaptations in a timely manner and at no extra cost to the BBC.

Mouse modifiers

The following key presses should modify the mouse behaviour as follows:

	Windows	Apple Mac	Linux
Add to selection	Ctrl	Cmd	Ctrl
Extend selection	Shift		Shift

Keyboard shortcuts

Where a conventional keyboard is used, the following “standard” keyboard shortcuts should be used for common operations if those operations are supported by the application. Additional or alternative keyboard shortcuts may be provided and should be configurable by the user. They must not conflict with these “standard” keystrokes.

	Windows	Apple Mac	Linux
Cancel current operation	Escape		Escape
Equivalent to clicking the currently highlighted option	Enter		Enter

Move focus to next entry field	Tab	Tab	Tab
Move focus to previous entry field	Shift + Tab		Shift + Tab
Move focus to next window	Alt + Tab	Cmd + Tab	Alt + Tab
Move focus to previous window	Alt + Shift + Tab		Alt + Shift + Tab
Close current window	Alt + F4	Cmd + W	
Help	F1		F1
Rename	F2		F2
Refresh	F5		F5
Create new	Ctrl + N	Cmd + N	Ctrl + N
Save	Ctrl + S	Cmd + S	Ctrl + S
Save as	Ctrl + Shift + S		Ctrl + Shift + S
Open file	Ctrl + O	Cmd + O	Ctrl + O
Print	Ctrl + P	Cmd + P	Ctrl + P
Undo	Ctrl + Z	Cmd + Z	Ctrl + Z
Cut	Ctrl + X	Cmd + X	Ctrl + X
Copy	Ctrl + C	Cmd + C	Ctrl + C
Paste	Ctrl + V	Cmd + V	Ctrl + V
Paste special	Ctrl + Shift + V		Ctrl + Shift + V
Select all	Ctrl + A	Cmd + A	Ctrl + A
Select using cursor keys	Shift + Cursor		Shift + Cursor
Access menu options	Alt + Letter ¹		Alt + Letter ²

Screen layouts

Users should be able to re-arrange the screen layout to suit their personal working preferences and needs. These customisations should be stored as part of the user's profile and should not affect any other user. The customisations should be easy to move from one workstation to another.

Support/Admin mode

It should be possible to temporarily revert all keyboard shortcuts, toolbar buttons, menus and screen layouts to pre-defined layouts in order to assist support personnel. Changes or additions to these pre-defined layouts should only be possible by the system administrators and should then be reflected on all user workstations from the start of the next workstation session.

¹ The letter should be highlighted on the menu (e.g. by underlining) either all of the time or as soon as the Alt key is pressed

² The letter should be highlighted on the menu (e.g. by underlining) either all of the time or as soon as the Alt key is pressed

Assistive technology

Currently, the core enabling technologies at the BBC on the Microsoft Windows platform are:

- Jaws – screen reading (voice and Braille output) for blind people
- Zoomtext – magnification for staff with low vision
- Dragon Naturally Speaking - voice-activation software for people unable to use a mouse or keyboard.
- TextHelp - a literacy support tool designed to assist users who require extra assistance when reading or composing text

These are the four market leaders in their respective areas of assistive technology. These products may be replaced in the future by similar, but more suitable products. For Apple-based systems the following are the accessibility enhancing software with which the system must be compatible:

- VoiceOver screen reading
- Zoom magnification
- Dragon Dictate for Mac (formerly MacSpeech) voice recognition.
- TextHelp for Mac

If the application/system are to be hosted on platforms other than Windows or Apple then assistive technology on that platform needs to be specified and considered.

All software technology must be tested and assured as compliant against these pieces of assistive software. Any technology that is not software based (e.g. digital desk technology) must have either an accessible software equivalent or adaptations to allow disabled people to use that technology.

In the event that any applications or systems of broadcast hardware are not compatible with these, or do not have suitable adaptations, there needs to be a contingency plan in place for providing disabled users with an equivalent level of functionality access to such non-compliant systems as their non-disabled colleagues.

3.2.2 Usability

In order to ensure that a product, (e.g. broadcast furniture, a system or application) is efficient, effective and satisfying to use, it is essential that the user experience is evaluated with its real end users. The usability requirements of an end product are the same irrelevant of whether the product is an existing piece of software/kit or is a bespoke piece of software/kit that is to be developed for the BBC. The basic usability requirements needed by the BBC are detailed in the General Technical Specification documents found on the BBC's DQ website (<http://www.bbc.co.uk/guidelines/dq/contents/diversity.shtml>).

Like accessibility, usability too must be built into a product. This means that end users' needs must be gathered (i.e. user requirements documentation), specified (i.e. specification documents) and evaluated (i.e. usability testing and not just user acceptance testing). Therefore suppliers are required to demonstrate experience and knowledge of producing usable systems.

If the product has already been developed, the supplier must provide details of the system development life cycle. A clear idea of the user involvement (if any) during the development process; any user testing (other than user acceptance testing) or usability expert reviews should also be highlighted.

If the product is to be developed specifically for the BBC, then details of the systems development life cycle should be provided with a clear indication of the points at which users will be involved; for example requirements gathering, specification and evaluation. The usability evaluation process (for example, user testing, expert reviews) should also be specified. Details of the point of the life cycle at which each usability evaluation will take place should also be highlighted.

In order to provide all BBC users with products that are engaging, efficient, easy to learn, satisfying and effective we are required to commission/purchase products that are deemed to be usable. Therefore we strongly urge all suppliers to consider usability as an essential aspect of their product.

3.2.3 Legal

If there is a section in the document that refers to contractually binding legal requirements then the following sections should be included within the legal section. (Note that the number of the relevant Schedule needs to be completed in these sections.)

The BBC has a legal obligation as an employer under the Equalities Act 2010 (“EA”). Consequently it is the BBC’s policy that all systems and equipment should be accessible to all users in compliance with this act.

Where any System, Hardware and Software that the Contractor provides to the BBC is not sufficiently accessible with reference to the EA and in the BBC's reasonable opinion, then, at the BBC's reasonable request, the Contractor shall produce a clearly defined and documented roadmap, detailing the steps it shall take to the extent necessary to assist the BBC in its compliance with the EA and with the relevant BBC's policies set out in {Schedule xx}. These steps, once agreed between the parties, shall be delivered by the Contractor within a reasonable time-frame and at no additional cost to the BBC, unless otherwise agreed between the parties.

4. Document Control Page

4.1 Document Identification

Title: Accessibility and Usability Standards Document One – Procurement

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4.2 Authorisation

Name:

Position:

Date:

Signature:

5. History

Version	Date	Author	Description
0.1	12 th May	Paul Balbi/ClaireJennings	Added standard layout
0.2	17 th May	Paul Balbi/ClaireJennings	Title change for consistency
0.3	18 th May	Paul Balbi/ClaireJennings	Text changes and proofreading
0.4	8 th June	Paul Balbi/Claire Jennings	Amendments following suggestions from Tim Harness
1.0	12/12/2005	DQ Team	Issued for publication in DQ
2.0	16/07/2007	Claire Jennings	Update to section 2.2
2.01	25/01/2007	Claire Jennings	Update to include provision of Broadcast Technology as part of accessibility considerations.
2.1	0307/2009	Terry Clarke/Paul Bepey	Updated BBC's diversity targets plus some general rewording, strengthening the language from, for example, should to must .
2.2	21/08/2009	Mickela Perera / Terry Clarke	Started incorporating usability into the document
2.3	02/11/2009	Mickela Perera / Theresa Goldband	Added in the language requirements, made changes to reflect stakeholder comments
2.4	20/11/2009	Terry Clarke/ Mickela Perera	Inclusion of sample text to be included in formal documents sent to suppliers like RFQ's or ITT's.
2.5	18/06/2010	Terry Clarke	Update of references to DDA 1995 to Equalities Act (EA) 2010. Update in the introduction to reference to 8 documents and inclusion of title of new Document 8 Email standards.
2.6	15/10/2010	Terry Clarke	Updates to include TextHelp and assistive technology for Apple (and potentially other) computers.
2.7	3/12/2010	Terry Clarke	Include more specific references to sub-titling and audio description.

2.8	11/01/11	Rizwan Nazir	Updated document to include a user role as opposed to a name.
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Any comments, queries or change control requests about this document should be addressed to: Claire Jennings, BBC's Head of Accessibility.